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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/549,593	09/19/2005	Katsuhiro Fujimoto	1830.1012	1090

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EXAMINER	
LEE, DORIS L	
ART UNIT	**PAPER NUMBER**
1796	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/549,593	FUJIMOTO ET AL.	
	Examiner	Art Unit	
	Doris L. Lee	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 August 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. All outstanding objections and rejections, except for those maintained below, are withdrawn in light of applicant's amendment filed on August 6, 2008.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior office action.

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. **Claim 1** is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification which states on page 4, “together with a combination of Component A and Component B, and/or Component C” supports only Groups I, II and V listed in claim 1. Group III (a combination of Component A and Component C) and Group IV (a combination of Component B and Component C) are not supported in the specification.

Claim Rejections - 35 USC § 103

6. **Claims 1-4, 6, 12-15 and 26** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kato et al (US 6,316,101)** in view of **Mortlock et al (US 5,562,984)** and **Kamachi et al (US 5,187,226).**

Regarding claims 1, 4 and 26, Kato teaches a polytrimethylene terephthalate composition (Abstract) comprising a

- Polymer component (abstract) wherein at least 90 % by weight is polytrimethylene terephthalate (Abstract)
- And at least one component of a phenol-based antioxidant (col. 8, lines 3-33) such as Irganox 1010 (col. 19, Example 9).

Kato teaches that the phenol-based antioxidant can be any known hindered phenol-based antioxidant (col. 8, line 8-9), however, Kato fails to teach the addition of the blends of components as recited in the claims.

Mortlock teaches a polyester composition (col. 1, lines 49-65) in which hindered phenol antioxidants are used such as Irganox 1010 as well as hindered phenol Irganox 1098 (col. 2, lines 34-45). As evidenced by Kamachi (col. 7, lines 10-23), Irganox 1098 has both the hindered phenol group of Component A as well as the secondary amine group of Component B and since it has both the hindered phenol group and the secondary amine group, can be considered to meet the limitations of component C.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the Irganox 1098 of Mortlock as the hindered phenol antioxidant of Kato. In view of Mortlock's recognition that Irganox 1010 and Irganox 1098 are equivalent and interchangeable, it would have been obvious to one of ordinary skill in

the art to substitute one with the other and thereby arrive at the present invention (it is noted that since Irganox 1098 meets all the requirements of Component A, B and C that all the blends and mixtures that are recited in the instant claim can be met by the a single addition of Irganox 1098 because the claim does not claim that component A, B and C must be different from one another). Case law holds that the mere substitution of an equivalent (something equal in value or meaning, as taught by analogous prior art) is not an act of invention; where equivalency is known to the prior art, the substitution of one equivalent for another is not patentable. See In re Ruff 118 USPQ 343 (CCPA 1958).

Regarding claim 2, Kato teaches that the total amount of the antioxidant is not more than 1% by weight with respect to the total composition (col. 8, lines 28-29). Therefore, the total amount of the secondary amine structure is from 0.001 to 1.0 milliequivalent per mole of the trimethylene terephthalate repeating units.

Regarding claim 3, Kato teaches that Components A, B, and C are antioxidants which is a kind of stabilizer (col. 8, line 4).

Regarding claim 6, modified Kato teaches that Component C is Irganox 1098 (Mortlock, col. 2, lines 34-45) which is N,N-hexane-1,6-diylbis(3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionamide).

Regarding claims 12 and 13, Kato teaches that the antioxidant can be dispersed into the fibers (col. 8, line 24-25). Kato also teaches a process in which the polytrimethylene terephthalate is melted via an extruder in order to spin fiber (col. 11, line 63-67).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to add the antioxidant to the melted polytrimethylene terephthalate in the extruder (which performs and kneading action) in order to disperse the antioxidant into the fiber. This is applying a known technique to a known product to yield predicable results. KSR v. Teleflex, 550 U.S. _, 82 USPQ2d 1385 (2007).

Regarding claim 14, Kato teaches that the material can be made into a fiber (Abstract).

Regarding claim 15, Kato teaches that Components A, B, and C are antioxidants which is a kind of stabilizer (col. 8, line 4).

7. **Claims 5 and 16-17** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kato et al (US 6,316,101)** in view of **Mortlock et al (US 5,562,984), Kamachi et al (US 5,187,226), Takenouchi et al (US 5,273,852)** and **Gross et al (US 6,569, 958)**.

The discussion regarding Kato, Mortlock and Kamachi in paragraph 6 above is incorporated here by reference.

Regarding claims 5 and 16, modified Kato discloses all the limitations as set forth above. Kelsey discloses that Component B can be Irganox 1098 (Mortlock, col. 2, lines 34-45). However, Kato does not teach that Component B is at least one selected from the group consisting of a reaction product of N-phenylbenzenamine with 2,4,4-trimethylpentene, 3-(N- salicyloyl)amino- 1,2,4-triazole, decamethylene carboxylic acid disalicyloylhydrazide and modified derivatives thereof.

Takenouchi teaches that either Irganox 1089 as well as Irganox 5057 (col. 20, line 43- 46) can be used in a polyester composition (col. 20, line 18) to prevent the deterioration in polymer properties caused by light, heat or chemical substances (col. 20, lines 38-42). As evidenced by Gross, Irganox 5057 is a hindered amine stabilizer described as benzenamine, n-phenyl-, reaction products with 2,4,4-trimethylpentene (col. 16, lines 38-41).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the Irganox 5057 of Takenouchi in the composition of modified Kato because it would amount to nothing more than a use of a known stabilizer for its intended use in a known environment to accomplish entirely expected result.

Regarding claim 17, modified Kato teaches that Component C is Irganox 1098 (Mortlock, col. 2, lines 34-45) which is N,N-hexane-1,6-diylbis(3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionamide).

8. **Claim 7-8 and 18-19** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kato et al (US 6,316,101)** in view of **Mortlock et al (US 5,562,984), Kamachi et al (US 5,187,226)** and **Stauffer et al (US 5,256,717).**

The discussion regarding Kato, Mortlock and Kamachi in paragraph 6 above is incorporated here by reference.

Regarding claims 7-8 and 18-19, although Kato teaches that various additives can be added to the composition (col. 7, line 64 - col. 8, line 2), it fails to teach that a material containing a sulfur atom is also present in the composition.

Stauffer teaches a polymeric material with a hindered phenol antioxidant is used (col. 3, lines 60-61). Stauffer also teaches that a synergist such as distearylthiodipropinoate (which contains a sulfur atom and is a thioether) is present in an amount up to 2% by weight of the composition (col. 4, lines 7-13).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the distearylthiodipropinoate of Stauffer in the composition of modified Kato. One would have been motivated to do so in order to receive the expected benefit of further enhancing the performance of the hindered phenol antioxidants (col. 4, lines 6-10). They are combinable because they are concerned with the same field of endeavor, namely polymeric resins with hindered phenol antioxidants. Absent objective evidence to the contrary and based upon the teaching of the prior art, there would have been a reasonable expectation of success.

9. **Claims 9-11** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kato et al (US 6,316,101)** in view of **Mortlock et al (US 5,562,984), Kamachi et al (US 5,187,226)** and **Hwo et al (US 2002/0127939).**

The discussion regarding Kato, Mortlock and Kamachi in paragraph 6 above is incorporated here by reference.

Regarding claims 9, 10 and 11, Kato teaches that the polymer is composed of polytrimethylene terephthalate, however fails to teach that the polytrimethylene terephthalate is 10 to 80 mole % and 90 to 20 mol % is made of a second polymer.

Hwo teaches a PTT blend with polyethylene terephthalate (PET) and polybutylene terephthalate (PBT) in a ratio from 1:99 and 99:1.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the blends of Hwo in the composition of modified Kato. One would have been motivated to do so in order to receive the expected benefit of modulating the physical characteristics of the composition to fit the desired application or manufacturing processes. They are combinable because they are both concerned with PTT materials. Absent objective evidence to the contrary and based upon the teachings of the prior art, there would have been a reasonable expectation of success.

10. **Claims 20-25** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kato et al (US 6,316,101)** in view of **Mortlock et al (US 5,562,984), Kamachi et al (US 5,187,226)** , **Stauffer et al (US 5,256,717) and Hwo et al (US 2002/0127939).**

The discussion regarding Kato, Mortlock and Kamachi and Stauffer in paragraph 8 above is incorporated here by reference.

Regarding claims 20, 21 and 22, Kato teaches that the polymer is composed of polytrimethylene terephthalate, however fails to teach that the polytrimethylene terephthalate is 10 to 80 mole % and 90 to 20 mol % is made of a second polymer.

Hwo teaches a PTT blend with polyethylene terephthalate (PET) and polybutylene terephthalate (PBT) in a ratio from 1:99 and 99:1.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the blends of Hwo in the composition of modified Kato. One would have been motivated to do so in order to receive the expected benefit of modulating the physical characteristics of the composition to fit the desired application or manufacturing processes. They are combinable because they are both concerned with PTT materials.

Absent objective evidence to the contrary and based upon the teachings of the prior art, there would have been a reasonable expectation of success.

Regarding claims 23 and 24, Kato teaches that the antioxidant can be dispersed into the fibers (col. 8, line 24-25). Kato also teaches a process in which the polytrimethylene terephthalate is melted via an extruder in order to spin fiber (col. 11, line 63-67).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to add the antioxidant to the melted polytrimethylene terephthalate in the extruder (which performs and kneading action) in order to disperse the antioxidant into the fiber. This is applying a known technique to a known product to yield predicable results. KSR v. Teleflex, 550 U.S. _, 82 USPQ2d 1385 (2007).

Regarding claim 25, Kato teaches that the material can be made into a fiber (Abstract).

Response to Arguments

11. Applicant's arguments with respect to all the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Doris L. Lee whose telephone number is (571)270-3872. The examiner can normally be reached on Monday - Thursday 7:30 am to 5 pm and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571)272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Doris L Lee/
Examiner, Art Unit 1796

/Vasu Jagannathan/
Supervisory Patent Examiner, Art Unit 1796